

injections into the lumbar paraspinal muscles and we review the relevant literature.

**Case report.**— A 27-year-old patient, with PKAN hereditary degenerative dystonia, has truncal dystonia symptomatology. Suddenly, she complained of low-back pain evaluated at 10/10 on a verbal scale. Low-back pain is induced by repetitive dystonic movements with upper limbs anterior elevation, spinal and hip extension (opisthotonos). Radiographs showed a L3 bilateral spondylolysis not shown in the previous radiographs. A classical corset immobilization isn't possible because of movement disorders. A first botulinum toxin injection is performed (150 UI Botox<sup>®</sup>) in lumbar paraspinal muscles for pain relief. Anterior head of deltoideus and gluteus maximus are also injected (for a total dose of 400 UI Botox<sup>®</sup> each session) to break the extension scheme. Four weeks after injections, the pain is evaluated at 5/10 and movement disorders were less frequent. Thanks to the adapted wheelchair and the posterior articular infiltration bilaterally (125 mg of hydrocortancyl), the patient is totally relieved. Because of pain recurrence, toxin injections are effectively renewed each 3 months.

**Discussion.**— The increase of spondylolysis frequency is shown in CP patients [1], one of the most frequent pathology with dystonia. The effectiveness of botulinum toxin injections in spinal muscles to decrease contractions is hard to prove but some articles agree with a decrease of disordered movements and pain [2].

#### References

- [1] Toshinori S, et al. Lumbar spinal disorders in patients with athetoid cerebral palsy. *Spine* 2006;31:66–70.
- [2] Comella C, Shannon K, Jaglin J. Extensor truncal dystonia: successful treatment with botulinum toxin injections. *Mov Disord* 1998;13:552–5.

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### Pneumothorax after botulinum toxin type A

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**Keywords:** Spasticity; Botulinum toxin; Pneumothorax

We are reporting a case of a pneumothorax after BoNT-A injection.

A 58-year-old patient with right spastic proportional hemiplegia due to a frontal meningioma surgery 36 years before required regular BoNT-A injections. The muscles (*subscapularis*, anterior and posterior way, and pectoralis major, two anterior injection sights) were injected with the help of electrostimulation detection. During the 6th session, the *subscapularis* was detected with difficulty. Two hours after the injection the patient presented acute dyspnea. A pneumothorax was diagnosed and drained; the patient was hospitalized in intensive care for 5 days. A relation between the injection and the pneumothorax was then established. There were no after effects of this episode.

This is the first described case of pneumothorax after BoNT-A injection. The probable cause was the detection of the *subscapularis* and not the *pectoralis major* who is superficial and easily spotted.

Similar cases were described during electromyographic exams of the muscles *teres major* and *pectoralis major* but never for the *subscapularis* [1].

This case reminds of the necessity of a technical aid for the detection of the muscles to be injected, as well as the risks taken while trying to detect thoracic muscles.

#### Reference

- [1] Al-Shekhlee A, et al. Iatrogenic complications and risks of nerve conduction studies and needle electromyography. *Muscle Nerve* 2003;27(5):517–26 [Review].

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### Botulism-like syndrome or widespread diffusion syndrome after injection of botulinum toxin A for neurogenic detrusor overactivity

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**Keywords:** Botulism-like syndrome; Botulinum toxin; Detrusor overactivity; Neuromuscular jitter; Adverse events; Muscular weakness

**Introduction.**— Botulinum toxin is an effective treatment for neurogenic or idiopathic detrusor overactivity refractory to antimuscarinics. Nevertheless, it can lead to locoregional and sometimes systemic complications like botulism-like syndrome.

**Observation.**— A 24-year-old woman, quadriplegic Cervical 7 ASIA C, spastic post-traumatic with detrusor overactivity at urodynamic assessment, was effectively treated for a year by antimuscarinics and intradetrusor botulinum toxin injections. Ten days after the last injection (Botox 300 UI), the patient complained of generalized muscle weakness, an inability to manipulate the steering wheel of her car and to transfer. The physical examination revealed an increase in the deficit of the triceps (MRC scale 2 vs 3+ initially), and a loss of 67 and 72% of strength in the isometric assessment of right and left deltoids respectively. The vital capacity was 2.07 L vs 2.36 L initially. The neuromuscular jitter of the orbicularis oculi was impaired with 22.7% of abnormal fibers and a mean jitter of 27.45  $\mu$ sec. Differential diagnoses were excluded with anti-Musk and anti-Ach R negative, a spinal MRI showing the absence of syringomyelia and compressive disc hernia, and the diagnosis of botulism-like syndrome was made. The patient had a clinical and electrophysiological follow-up, with a normalization of muscle power in a year and slow improvement of neuromuscular jitter.

**Discussion.**— Several cases of generalized muscle weakness after intradetrusor botulinum toxin injections have been described, with poorly understood pathophysiological mechanisms. The interest of this observation is the one-year follow-up with electrophysiological measures, muscle power evaluation and occupational therapy evaluation of prehension. General complications of botulinum toxin injections for detrusor overactivity require regular clinical and electrophysiological monitoring. Patients should be informed of this potential risk.

#### Further reading

Karsenty G, et al. Botulinum toxin A (Botox) intradetrusor injections in adults with neurogenic detrusor overactivity/neurogenic overactive bladder: a systematic literature review. *Eur Urol* 2008;53:275–87.

De Laet K, Wyndaele JJ. Adverse events after botulinum A toxin injection for neurogenic voiding disorders. *Spinal Cord* 2005;43:397–9.

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### Proposal for a decision algorithm in the diagnostic and therapeutic management of stiff-knee in the neurological patient

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**Keywords:** Gait; Hemiplegia; Stiff-knee; Botulinum toxin

**Introduction.**— The stiff-knee is a lack of shortening of the lower limb during walking secondary to a defect of knee flexion during the swing phase. This is a